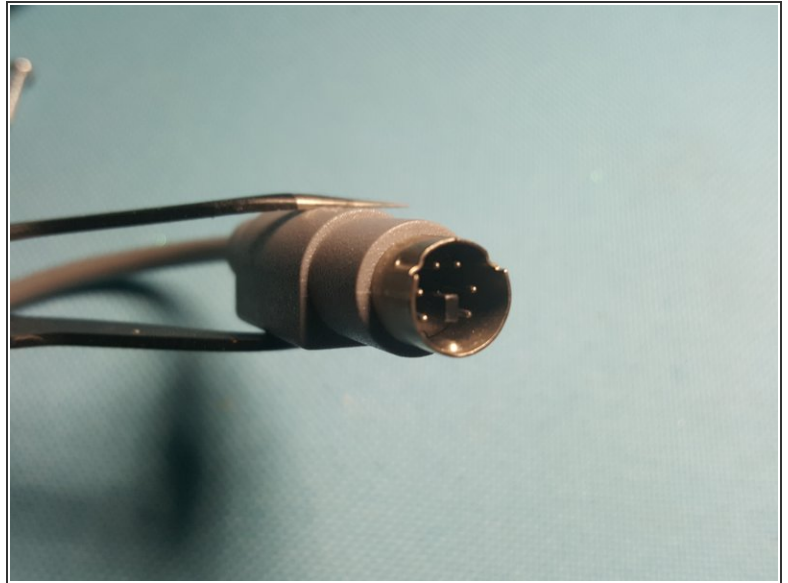# Logitech M-S35 Mouse Teardown

This is a teardown of the Logitech M-S35 three-button mouse , manufactured in 1998.

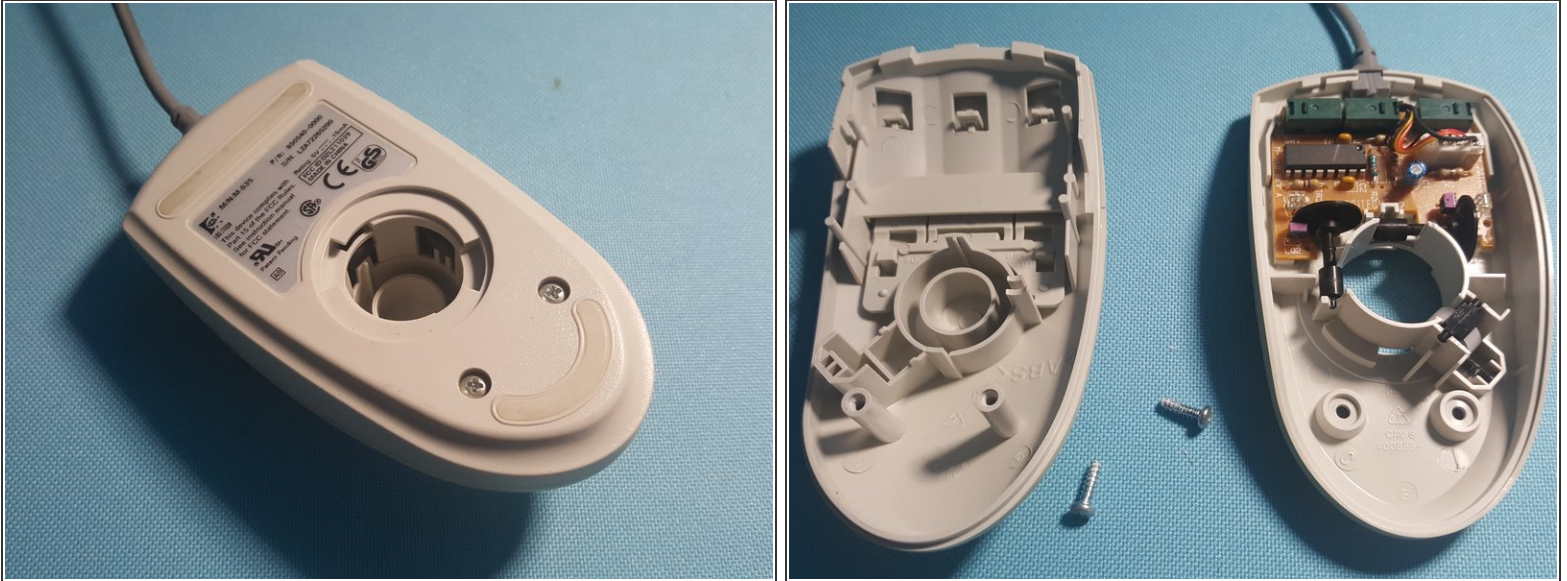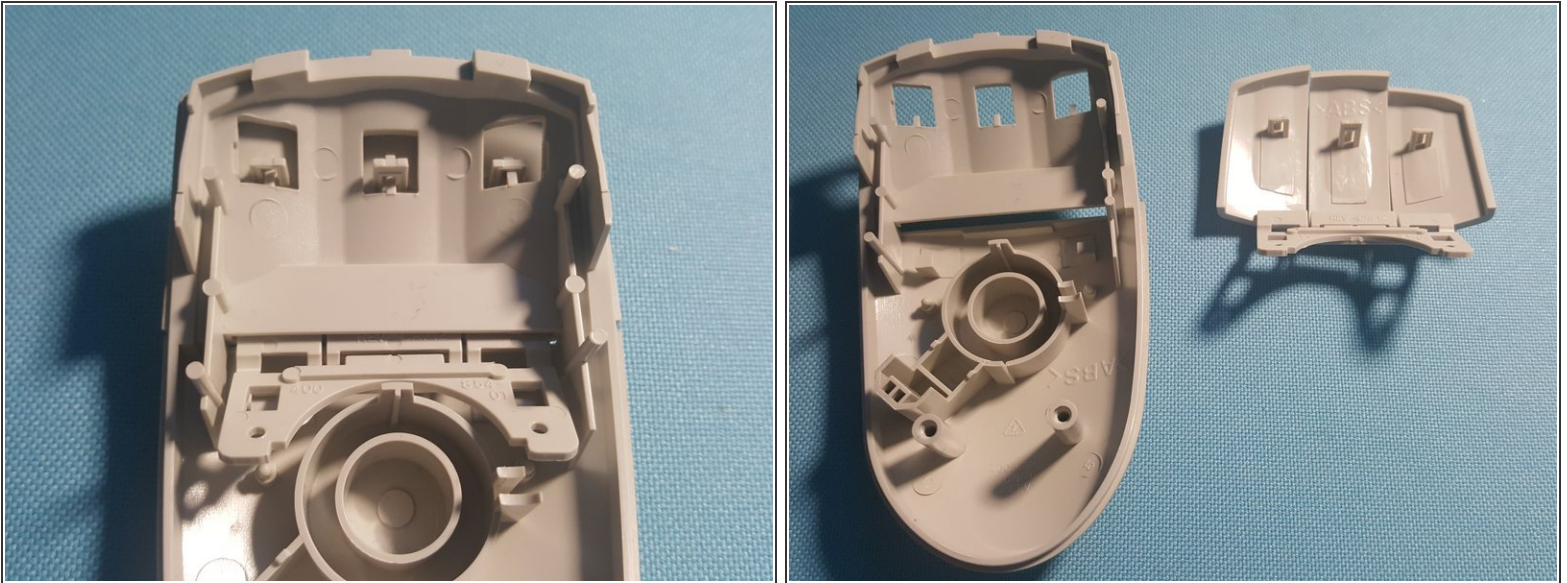Written By: Ezra Pramono

Step 1 — Device Overview

- The Logitech M-S35 mouse features left, middle, and right buttons, and an underside ball to track movement. The mouse connects to devices via a 6-pin PS/2 port, the standard during the 1990s. The mouse does not include a scroll wheel.

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Step 2 — Shell Disassembly

- To begin disassembling the mouse, rotate and pull out the ball retaining ring on the underside, and remove the ball.

- Unscrew the two philips head screws near the bottom of the mouse.

- The two halves of the shell should separate easily, but a plastic pry tool or credit card can be used to gently encourage the process by prying along the seam.

- The separation of the two halves reveals a singular PCB and encoder wheels in the bottom half.

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Step 3 — Top Shell Button Removal

- The upper half includes the outer "buttons", which only act as extensions to press the microswitches on the PCB.

- The shell buttons can be removed from the rest of the shell by prying up the plastic tabs on either side of the center ball cavity and pulling out the buttons assembly from the top.

Step 4 — Bottom Assembly
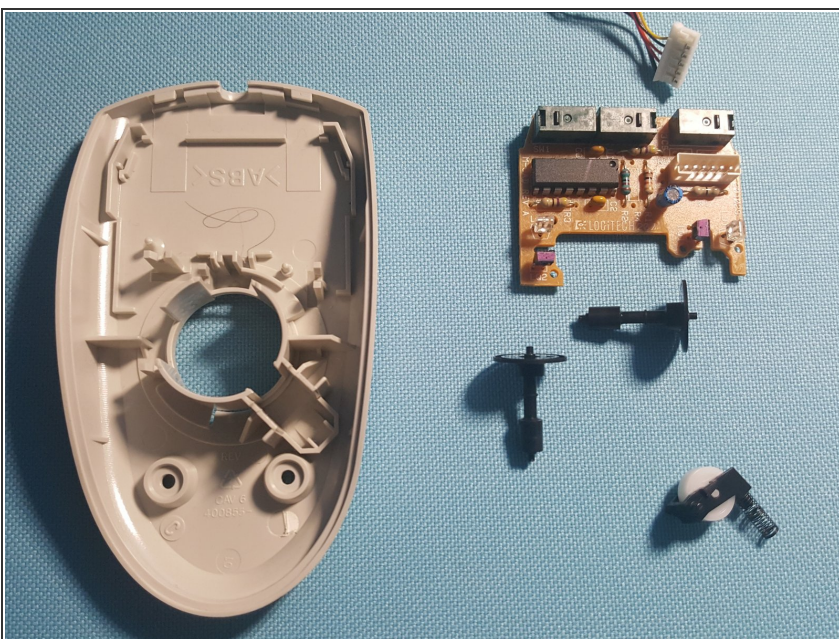
- On the bottom shell, the vertical and horizontal encoder wheels as well as the ball tensioning wheel can be pulled out of their plastic retaining clips.

- The PCB then can be lifted out of the shell, and the 6-pin connector can be disconnected from it. This is as far as the mouse can be disassembled without desoldering individual components from the PCB.

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Step 5 — PCB Analysis
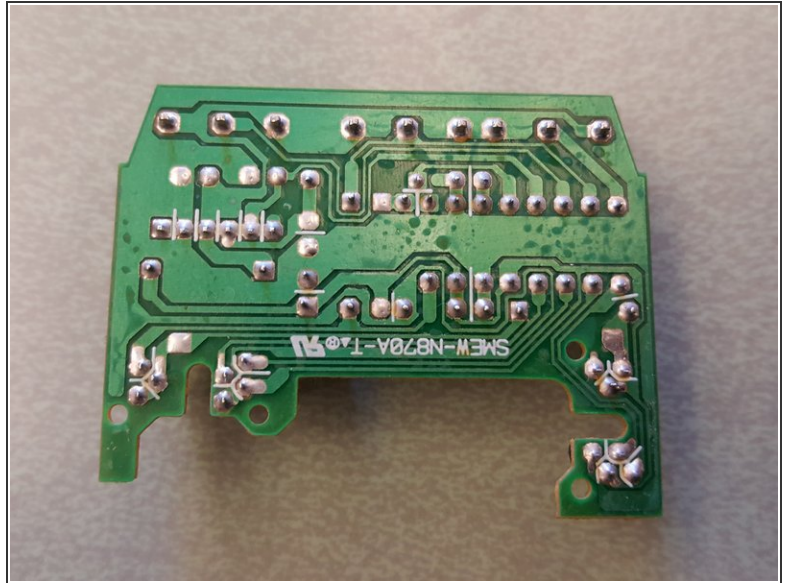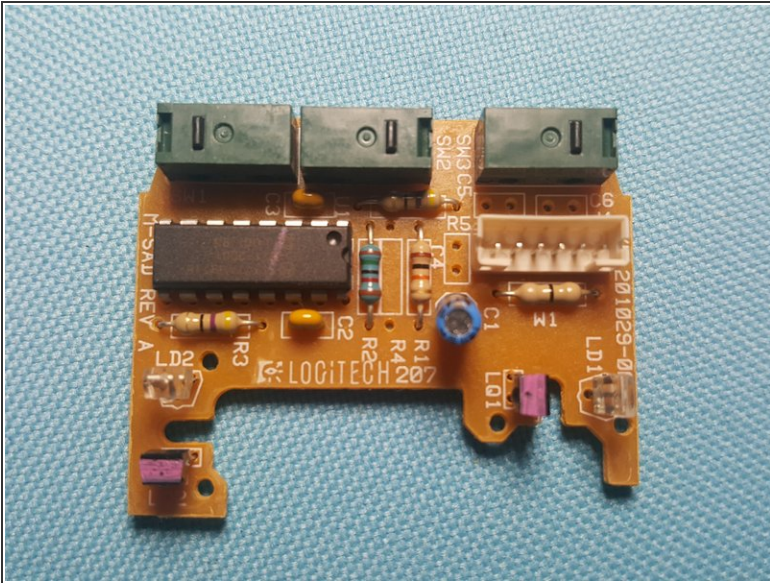
- The board is a single layer PCB, populated entirely with through-hole components (no surface mount components).

- There are three microswitches at the top for the buttons. The board has two IR transmitter/receiver pairs that measure the rotation of the horizontal and vertical encoder wheels.

- The processor is a 331021-2001 14-pin DIP chip manufactured by Motorola, which is a custom mouse driver chip.

- There are numerous resistors and capacitors which serve various purposes in the circuit.

To reassemble your device, follow these instructions in reverse order.